32. (Newly Added) The method as in claim 12, in which providing said substructure includes providing said substructure including silicon formed over said horizontal sections of said conductive material and over said vertical sections of said conductive material, and

said forming isolated silicon sections includes polishing said to produce said isolated silicon sections.

REMARKS

~~Claims 1-31 were previously pending in the present application. Claims 23-31 have~~ been withdrawn from consideration and are hereby cancelled. Claims 1-22 have been rejected. Claims 1, 4-8, 10-18, and 20-22 have been amended. Claim 32 is newly added. Applicants respectfully request re-examination, re-consideration and allowance of each of pending claims 1-22 and 32.

I. Non-Elected Claims

Claims 23-31 have been previously withdrawn from consideration and are hereby cancelled.

II. Objection to Claim 6

In the Office Action, specifically in Paragraph 2, claim 6 was objected to under 37 C.F.R. §1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants respectfully submit that this claim objection is obviated based on reasons set forth below.

In particular, The Office action states that "the step of claim 6, lines 1-2 is recited in claim 1, lines 4-7." In the following discussion, it is pointed out that each of claims 1 and 6 has been amended to address formal matters, as will be discussed below.

As amended, independent claim 1 recites the feature of "forming isolated silicon sections, each <u>bounded subjacently</u> by horizontal sections of a conductive material and

laterally by vertical sections of said conductive material". These features were previously recited in lines 4-7 of originally-filed claim 1. Claim 6, as amended, recites the feature of "further comprising enclosing at least some of said individual isolated silicon sections with conductive material". The respective features are distinguished and claim 6 therefore further limits the subject matter of claim 1.

More particularly, claim 1 recites the feature of silicon sections that are isolated from one another, such as shown in Figure 11, which shows silicon islands ("sections") 50 bounded subjacently by subjacent portion 54 of conductive film 32 and in Figure 10, which shows the silicon islands 50 surrounded laterally by vertical portions 56 of conductive film 32. Silicon islands 50 as shown in Figures 10 and 11 are therefore *isolated* but not *enclosed*. Silicon islands 50 represent the silicon sections recited in claim 1 as originally-filed and as amended. Claim 6 adds the additional limitation of "enclosing at least some of said individual isolated silicon sections with conductive material". This additional limitation is shown in Figure 12 which illustrates an exemplary cover 80 which encloses (and therefore electromagnetically shields) the illustrated silicon section - silicon island 50. The limitations of claim 6 therefore go a step further and provide additional structure to the silicon sections recited in claim 1 which are isolated from one another and bounded subjacently and laterally by conductive material, but not enclosed.

Therefore, dependent claim 6 further limits the subject matter of claim 1 from which it depends in compliance with the requirements of 37 CFR § 1.75(c). The objection to claim 6 should therefore be withdrawn.

III. Claim Rejections Under 35 USC § 112, first paragraph

In the Office action, specifically in paragraph 4, claims 1-22 were rejected under 35 USC § 112, first paragraph. Applicants respectfully submit that these claim rejections are overcome based on the claim amendment and the remarks set forth below.

In particular, the Office action states that "the step of lines 4-8 in claim 1 is only shown to be formed after the bonding step". Independent claim 1 has been amended and now recites the distinguishing features of the invention in the following written order:

providing a semiconductor substrate . . .;

providing a substructure . . .;

bonding said bottom portion of said substructure to said top surface of said substrate; and

forming isolated silicon sections . . . in a top portion of said substructure.

While applicants respectfully point out that method claims do not require steps to be preformed in order written, as recently affirmed in the U.S. Court of Appeals Federal Circuit ~~case of *Altiris Inc. v. Symantec Corp.*, 318 F.2d 1363 (Fed. Cir. 2003), amended~~ independent claim 1 now complies with the requirements of 35 USC § 112, first paragraph and is in condition for allowance. Each of claims 2-22 depend, directly or indirectly, from amended independent claim 1. Dependent claims 1-8, 10-18, and 20-22 have been amended for consistency with the amendment to claim 1, and/or to address other formal matters, as discussed below. Applicants point out that the claims which originally contained the phrase "the step of", have further been amended to excise the phrase "the step of". This amendment is editorial in nature.

Each of dependent claims 2-22 is therefore in compliance with the requirements of 35 USC § 112, first paragraph. Therefore, the rejection of claims 1-22 under 35 USC § 112, first paragraph, should be withdrawn.

IV. Claim Rejections Under 35 USC § 112, second paragraph

In paragraph 6 of the Office action, claims 4-10, 11, 21 and 22 were rejected under 35 USC § 112, second paragraph, as being indefinite. Applicants respectfully submit that these rejections are overcome based on the claim amendments and the remarks set forth below.

In particular, paragraph 7 of the Office action states "in claims 4-7 and other occurrences, it is questioned what is recited through the term 'generally enclosing'." Responsive to this comment, each of claims 4-7 has been amended to excise the term

"generally." Claims 4-7 now each recite the feature of enclosing. Claims 4-7 and also claims 8-10 which depend directly from amended claim 7, are each therefore in compliance with the requirements of 35 USC § 112, second paragraph.

The Office action further states, in paragraph 8, "In claim 11, it is questioned what is recited through the term 'substantially'." Responsive to this comment, the term "substantially" has been excised from claim 11 by way of amendment and replaced with the term "about". Claim 11 now more particularly points out applicants' invention.

In the Office action, specifically in paragraph 9, it was indicated that, with respect to claims 21 and 22, it is unclear what is recited through the term "therethrough". Responsive to this comment, each of claims 21 and 22 has been amended to replace the term "therethrough" with the expression of "side conductive materials . . . include openings that extend through said side conductive materials." Amended claims 21 and 22 are therefore in compliance with the requirements of 35 USC § 112, second paragraph.

For reasons set forth above, each of claims 4-10, 11, 21 and 22 are now in compliance with the requirements of 35 USC § 112, second paragraph, and the rejection of claims 4-10, 11, 21 and 22 under 35 USC § 112, second paragraph, should be withdrawn.

V. Claim 32

Claim 32 has been added to more particularly point out another distinguishing feature of applicants' invention. Newly added claim 32 depends from amended dependent claim 12, which depends from amended independent claim 1, and is in allowable form for reasons set forth above. Therefore, newly added claim 32 is also in allowable form.

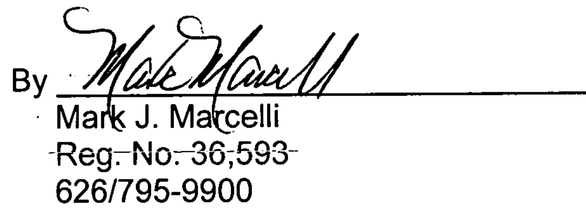
CONCLUSION

Based on the foregoing, each of claims 1-22 and 32 is in allowable form and the application is therefore in condition for allowance, which action is respectfully and expeditiously requested.

Application No. 09/911,364

Attached hereto is a marked-up version of the changes made to the above-identified application by the current amendment. The attached page is captioned "**Version with markings to show changes made**."

Respectfully submitted,
CHRISTIE, PARKER & HALE, LLP



By Mark J. Marcelli
~~Reg. No. 36,593~~
626/795-9900

MJM/dlf

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Amend claims 1, 4-8, 10-18 and 20-22 as follows:

1. (Amended) A method for forming a semiconductor product, comprising [~~the steps of~~]:

providing a semiconductor substrate having an insulating layer formed thereover and including a top surface;

providing a substructure having a [~~top portion including isolated silicon sections, each bounded subjacently by horizontal sections of a conductive material and laterally by vertical sections of said conductive material, and a~~] bottom portion formed of a dielectric film; [~~and~~]

bonding said bottom portion of said substructure to said top surface of said substrate; and

forming isolated silicon sections, each bonded subjacently by horizontal sections of a conductive material and laterally by vertical sections of said conductive material, in a top portion of said substructure.

4. (Amended) The method as in claim 3, further comprising [~~generally~~] enclosing a group of said first plurality of isolated silicon sections with conductive materials.

5. (Amended) The method as in claim 4, in which said [~~step of generally~~] enclosing includes forming insulating materials over said group of isolated silicon sections, forming a conductive cover layer over said insulating materials and forming side conductive materials extending from said conductive cover layer to said vertical sections which peripherally surround said group,

said conductive material, said conductive cover layer and said side conductive materials combining to electromagnetically shield said group.

6. (Amended) The method as in claim 1, further comprising [~~the step of generally~~] enclosing at least some of said individual isolated silicon sections with conductive material.

7. (Amended) The method as in claim 6, in which said [~~step of generally~~] enclosing includes, for each isolated silicon section being enclosed, forming insulating materials over said isolated silicon section, forming a conductive cover layer over said insulating materials and forming side conductive materials extending from said conductive cover layer to said vertical sections which bound said isolated silicon section;

~~said conductive material, said conductive cover layer and said side conductive~~ materials combining to electromagnetically shield said isolated silicon section.

8. (Amended) The method as in claim 7, in which said [~~step of~~] forming [~~said~~] insulating materials includes, for each isolated silicon section being enclosed, forming a succession of insulating layers and forming trenches in each of said succession of insulating layers, said trenches extending along the periphery of said isolated silicon section, and filling said trenches with said side conductive materials.

10. (Amended) The method as in claim 7, in which said [~~step of~~] forming insulating materials includes, for each isolated silicon section being enclosed, forming a succession of insulating layers and said [~~step of generally~~] enclosing includes forming one of a continuous opening and a linear array of spaced openings in each of said succession of insulating layers above said vertical sections which bound said isolated silicon section, and filling said formed corresponding openings with said side conductive materials.

11. (Amended) The method as in claim 1, in which said semiconductor substrate and said substructure each include [~~substantially~~] about the same lateral dimensions and shape.

12. (Amended) The method as in claim 1, in which said [~~step of~~] providing [~~said~~] a substructure includes providing a further substrate having said substructure formed [~~in overturned position~~] as a [~~top~~] portion thereof and further comprising [~~the step of~~] separating said substructure from other portions of said further substrate.

13. (Amended) The method as in claim 12, in which said [~~step of~~] separating takes place after said [~~step of~~] bonding.

14. (Amended) The method as in claim 12, in which said [~~step of~~] separating ~~comprises one of backgrinding and etching.~~

15. (Amended) The method as in claim 12, in which said [~~step of~~] providing [~~said~~] a substructure includes providing said further substrate having a top surface, implanting hydrogen into an upper region of said further substrate, said upper region including a subjacent boundary, forming trenches within said upper region and extending vertically downward from said top surface, forming said conductive material over said top surface and filling said trenches, and forming said dielectric film over said conductive material thereby forming said substructure in overturned position as a top portion of said further substrate, and

said [~~step of~~] separating includes separating said substructure from other portions of said further substrate along a crack propagated along said subjacent boundary.

16. (Amended) The method as in claim 15 in which said [~~step of~~] separating includes heating to a temperature within the range of 400°C to 600°C.

17. (Amended) The method as in claim 15, further comprising [~~the step of~~] planarizing after said [~~step of~~] forming said conductive material over said top surface of said further substrate and filling said trenches, and prior to said [~~step of~~] forming said dielectric film.

18. (Amended) The method as in claim 1, in which said [~~step of~~] bonding comprises hydrophilic bonding.

20. (Amended) The method as in claim 1, wherein said insulating layer comprises a silicon dioxide layer and said dielectric film comprises a silicon dioxide film and said [~~step of~~] bonding includes hydrophilic bonding.

21. (Amended) The method as in claim 5, in which said side conductive materials are not continuous and include openings [~~therethrough~~] that extend through said side conductive materials, and further comprising forming interconnect leads extending through said openings.

22. (Amended) The method as in claim 7, in which said side conductive materials are not continuous and include openings [~~therethrough~~] that extend through said side conductive materials, and further comprising forming interconnect leads extending through said openings.

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